

The Bureau of Reclamation
WaterSMART Grants:
Water and Energy Efficiency Grants

Sunrise and Bench Creek
Irrigation Company

FY 2020

BOR-DO-20-F001

Piping and Small Hydro Project



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Technical Proposal and Evaluation Criteria

Executive Summary

Applicant Info

Date: October 3, 2019

Applicant Name: Sunrise & Bench Creek Irrigation Company (Sunrise)

City, County, State: Kamas, Summit County, Utah

Project Manager:

Brian Deeter

Project Manager/Engineer

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Project Funding Request: Funding Group II \$ 538,000; Total Project Cost \$1,196,500

Project Summary

Specify the work proposed, including how funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA.

The proposed Sunrise & Bench Creek Irrigation Company (Sunrise) Piping and Small Hydro Project will save 802 acre-feet of water by replacing 7,300 feet of seventy and fifty-year-old corrugated metal pipe, and 500 feet of open and unlined ditch. The 7,800 will be piped with 26-inch HDPE pipe. In addition, the project will build a new inlet structure, meter station, and widen the settling pond to follow a more efficient alignment, allowing water not required for irrigation to remain in the Provo River. An underwater micro-hydro turbine station will be installed, which will produce 439 kWh of energy per year to run the meter. The proposed project will contribute to the goals of this FOA in the following ways:

- Conserve and use water more efficiently: a quantifiable water savings of 802 acre-feet, which will be saved in the Provo River and eventually into the Jordanelle Reservoir.
- Construct an underwater micro-hydro turbine station that will produce 439 kWh of energy.
- Irrigators committed to work with NRCS to implement and/or enhance sprinkler irrigation systems.
- Water will remain in the Provo River rather than being conveyed and lost over 1.45 miles through the canal before being returned. This will benefit endangered species and their habitats and reduce conflicts between irrigation and recreational water users.

Length of Time and Estimated Completion Date

State the length of time and estimated completion date for the proposed project.

This project is ready to move forward as soon as it is awarded. Sunrise has been and will continue to work with the Utah Division of Water Resources (DWRe) to secure a loan for a portion of their matching funds. DWRe requires that final design is completed before their closing award contract can be signed. Therefore, the final design and the environmental report will coincide and are estimated to take six to twelve months to complete. It is anticipated that the actual construction of the piping portion of the project will start September/October 2021 with

final construction completion October 2022. The project will be accomplished within the three-year allowance.

Federal Facility

Whether or not the project is located on a Federal facility.

The project is not directly located on a federal facility; however, Sunrise is in the same basin as the Jordanelle and Deer Creek Reservoirs. The water Sunrise will conserve can be contribute to the Provo River, which feeds Jordanelle and Deer Creek Reservoirs

Background Data

Sunrise & Bench Creek Irrigation Company has a long history of agriculture in the Woodland, Utah area. Water rights date back to 1885 out of the Provo River. Sunrise is a small irrigation company with only 8 shareholders and provides water to just under 600 acres. This area has prime agriculture lands where the water is vital to the survival of these farms and ranches; without it, many of the old family farms cannot survive.

Photo 1 Buffalo Ranch



Woodland Utah sits at an elevation of 6,722 feet and is one of just a few agriculture areas in Utah at this elevation who are still actively farming and producing products that are being shipped across the United States. The area is still actively producing goods and products from their farms that drive the economy in this area. There are

festivals and boutique farms that have preserved the farming industry of Woodland. On September 21, 2019, the annual Chokecherry Festival was held in Woodland. The festival, as stated on its website, “celebrates the rich heritage of the community, with the name derived from the Chokecherry bushes that abundantly grow in this area.” The festival consists of “trail rides, hay wagon rides, pumpkin patch, and hay bale maze.” Vendors sell their farm grown produce or products made from farming. There are “concessions stand, and the best chokecherry jams, jellies, and syrups.” The Festival is also an educational festival, as it introduces many people to farming who know nothing about farming. They learn where their food comes from and children are introduced to what it is like to pick your own pumpkin right out of the pumpkin patch or what it is like to play in a pile of hay or go through a maze created from hay bales. None of this could be done without water to keep the farms growing and producing their crops.

Photo 2 Golden Creek Ranch

The farms are economic drivers for the community and include boutique farms, such as Gold Creek Ranch – an Artisan farm that produces award winning specialty cheeses – and Buffalo Run Ranch,



which is a specialty buffalo meat sustainable practice ranch that produces meats, jerky, and other products. These boutique farms are feeding the agricultural resurgence across the country as people are more concerned where their food comes from and the impacts of farming on the environment. People want to buy local. It is the farm-to-table concept – locally raised and locally grown small agricultural family farms – that are now coming full circle and bringing back farming to what it once was.

Agricultural lands in this area have always been productive with good crop yields; however, without water, that may not continue to be the case. Over the past six years, Summit and Wasatch Counties have had some of the driest summers accompanied by scorching temperatures and wildfires. Local farmers have seen a reduction in harvest over the past seven years due to an ongoing drought. Up until this past

Photo 3 Rock Slide on the CMP by the Provo River

year, Sunrise has had to reduce watering times during the most critical irrigation months of the season, which has had a real impact on the area ranchers. During these past seven years – every July, the most critical water month for this area – they have had to reduce their water to 40 percent of their right. In the Fall of 2019, Sterling Banks, a Utah State University extension agent, indicated that the average rancher in Utah is expected to lose about one-third of their crop yield due to the drought, and there has been about a 30 percent reduction in grazing land. This past 2019 irrigation season, the corrugated metal pipe failed due to a rockslide in the late spring, causing Sunrise Irrigation to not have water in the system until very late in the irrigation season. Luckily the spring was wetter than usual so the irrigators were not as impacted as they might have been if the water year was the same as the previous year. Due to the intense drought during the previous irrigation season, many of the farmers had reduced yields of alfalfa and hay, requiring many of them to purchase more feed for their animals than what was normal. The drought years and age and condition of the system are leaving farmers wondering what they can continue to grow and how they will be able to stay in their farming and ranching businesses.



The upper system is piped with corrugated metal pipe dating back to 1950 and 1970. Rusted and weak, this pipe parallels the Provo River and, in some locations, hangs just above the river. The

pipe is continually subjected to rock and landslides, flooding, and corrosion. Other areas of the system are comprised of open, unlined ditches.

Many Sunrise irrigators have been paying for Jordanelle water shares in case they do not have water available from their Provo River shares. However, if they could fix their system to conserve the hundreds of acre-feet of water lost each year, they would not need to use those additional shares, conserving those shares in Jordanelle each year.

Water Supply

Source of water supply and water rights involved.

The source of Sunrise's water supply is the Provo River. Their existing diversion is located on the Provo River. The inlet and settling pond were constructed in 1950 when the original corrugated metal pipe was installed.

Sunrise & Bench Creek Irrigation Company has a right to divert 9.6 cfs. Those flows are reduced throughout the irrigation season as water drops in the river and lesser water rights are cut. The average water flow through the flume where the state of Utah measures was 2.76 cfs in 2018. They typically divert over 11 cfs at the river. Water rights are from the Provo River, which include:

- 55-11135 4 cfs
- 55-11234 2.4 cfs
- 55-11315 3.2 cfs

Currently, the system operates on turns and all users have sprinkling systems, many of which are over thirty years old. Users either pump right out of the ditch or have a pond that they fill and pump out of.

Current water uses and number of water users served.

Sunrise's water supply is primarily used for irrigation. Sunrise has 403 shares and 8 shareholders.

Current and projected water demand/potential shortfalls in water supply.

Sunrise diverts and attempts to deliver their full water right as described above on an annual basis. Because of the large seepage losses, the water diverted is not delivered in full. This reduces the ability for users to take advantage of their full shares and to put it to beneficial use on their crops.

There are approximately 600 acres of agricultural land within the Sunrise service area.

Shortfalls in the Water Supply

Sunrise faces potential water supply shortfalls in the following areas:

Seepage Losses: The condition of corrugated metal pipe that the diverted water must travel through to get to the measuring device requires Sunrise to divert more than their allocated water right to compensate for water losses. At approximately 1,250 feet upstream of the measurement location, a portion of the water from the ditch can be dumped back into Bench Creek as needed to achieve the flow permitted by their water right at the flume where the State of Utah measures the flow. Flows well above their water right are required to be diverted from the river to maintain their allotted flow at the flume. Flows are reduced throughout the irrigation season as water drops in the river and lower-priority water rights are cut. During drought years, flows are

reduced even earlier than normal. Water turns are worked out between shareholders to ensure that everyone gets what they need. Sunrise’s water right is considered a lesser right and so their water right is always cut.

Drought: Since 1895, when official weather records have been kept, “[Utah](#) has never experienced a year with as little precipitation as it did in 2018 and only one previous year registered higher average temperatures,” according to the National Oceanic and Atmospheric Administration (NOAA). “For the water year that ended Sept. 30, Utah led the nation in terms of its relative dryness over the past 123 years. When it came to hot weather, the Beehive State trailed only neighbors Colorado, Arizona and New Mexico.” The impact can be seen in plunging levels of Utah reservoirs, disappearing streams, and toxic algal blooms. The weather pattern since 1980 has increased drought condition across the Western U.S. For Utah, this means a dangerous reduction in mountain snowpack, and what was consider a dry season in the past may now, after so many years, be considered normal. Josh Palmer, spokesman for the Utah Division of Water Resources, indicated in an article on October 2018 that “we have seen one good water year for every five bad ones, and that one good year won’t get us out of the problem. From a climate standpoint, it’s more important than ever *that* we conserve.”

In Fall of 2018, sixteen of the 49 major reservoirs tracked by the Utah Department of Natural Resources were below 20 percent, and eight of those were below 5 percent. See Figure 1. The 2019 winter season gave the storage facilities some reprieve, in that we had a good snowpack that helped fill the reservoirs.

2018’s wildfire season and drought severely impacted the cattle industry, which will pass on higher costs to consumers. Doug Perry, spokesman for the Utah Department of Agriculture and Food, said many ranchers were forced to sell off as much as one-third of their inventory, and rangeland will take up to three years to recover from being scorched.

Over the past eight years, Summit and Wasatch Counties have had some of the driest summers, accompanied by scorching temperatures and wildfires. In 2010, the Utah Division of Forestry, Fire and State Lands reports that 64,781 acres burned in Utah. In 2018, 486,063 acres burned in Utah. Last year (2018), Sunrise irrigators were cut to 40 percent of their water share by the end of June and the first of July. This had an impact on the amount of hay that was harvested, which required them to purchase more feed than normal or sell off more livestock. This past year – March 2019, according to NRCS records, the reservoirs started at 50 and 75 percent. Utah had a good snowpack and a wet spring, so the reservoirs filled up, and irrigators did not have to start using them until very late in the spring. Currently, the reservoirs are 100 to 125 percent full, and so we will go into the 2020 irrigation season with a good amount of water (see Figures 2 and 3 below.

Figure 1- Reservoir Storage as of September 9, 2018

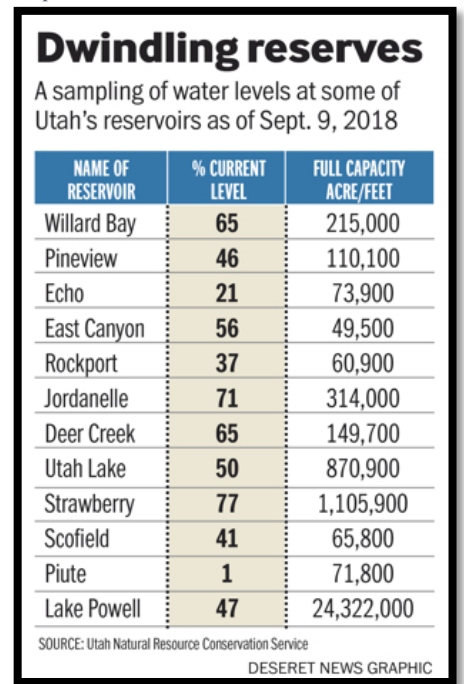


Figure 2-Reservoir storage as of March 2019



Figure 3- Reservoir Storage as of September 1, 2019



If water is primarily used for irrigation, describe major crops and total acres served.

Sunrise irrigates approximately 600 acres. Major crops include hay, alfalfa, and pasture grasses. At least 60 percent of the irrigated acreage is farmland that provides feed for animals and the livelihood for the boutique farms that produce cheese, ice cream, buffalo meat, and other products.

Water Delivery System

Describe the applicant's water delivery system as appropriate. For agricultural systems, please include the miles of canals, miles of laterals, and existing irrigation improvements (e.g., type, miles, and acres). For municipal systems, please include the number of connections and/or number of water users served and any other relevant information describing the system.

The existing ditch includes 7,300 feet of 30-inch CMP constructed in the 1950s and 1970s with approximately 40-ft of new CMP installed in 2019 to fix where the rockslide impacted the CMP. It also includes approximately 10,300 feet of open and unlined ditch below the CMP.

Hydropower/Energy Efficiency

If the application includes hydropower or energy efficiency elements, describe existing energy sources and current energy uses.

The project will increase the production of hydropower by constructing an underwater micro-hydro turbine station that will produce 439 kWh of energy per year. The power will be used at the diversion and measuring station on the canal to meet the power needs of the system at that remote location.

Relationship with Reclamation

Identify any past working relationships with Reclamation. This should include the date(s), description of prior relationships with Reclamation, and a description of the project(s).

Sunrise has participated with the Central Utah Water Conservancy District (CUWCD) in the development of their most recent 2060 Conservation Plan, and over the years, has worked on small projects in the Provo River. This is the first time Sunrise has applied for funding for a project from Reclamation.

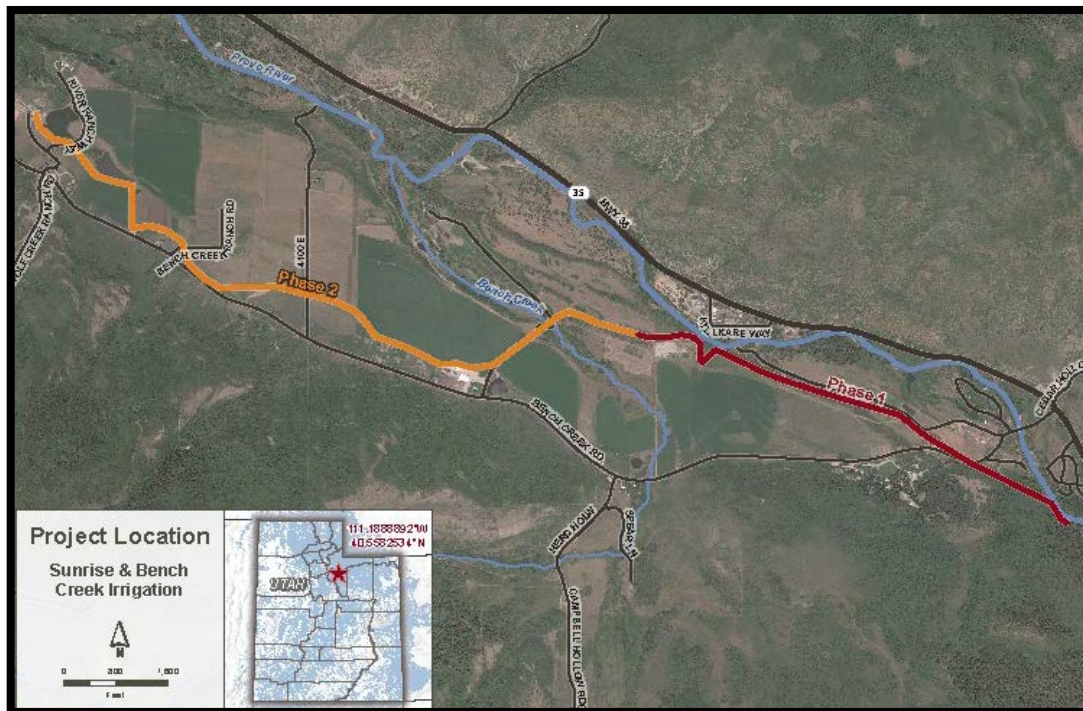
Project Location

Geographic Location

Provide specific information on the proposed project location or project area including a map showing the geographic location. For example, {project name} is located in {state and county} approximately {distance} miles {direction, e.g. northeast} of {nearest town}. The project latitude is {##°##'N} and longitude is {###°##'W}.

The Sunrise & Bench Irrigation canal is approximately 3.5 miles long and extends from the Provo River through the area of Woodland, Summit County, Utah. It is approximately ten miles south of Kamas, Utah and twelve miles east of the Jordanelle Reservoir. See Attachment A Sunrise Project Location Map for a larger view, and Attachment B Project Detail Map.

Figure 2 Project Location Map



Technical Project Description

Describe the work in detail, including specific activities that will be accomplished. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

This Project will replace the CMP pipe and a small section of the open ditch with 7,800 feet of 26-inch HDPE DR-41 pipe. The existing diversion will remain, but a new inlet structure will be constructed, and a new mainline meter will be installed. See Attachment B Project Detail Map.

The CMP pipe will be slip lined with 26-inch HDPE pipe along with a small portion of the open ditch. The pipe will be installed within the existing ditch alignment. As the pipeline is constructed, and where pressures are available, existing pumps can be eliminated.

The 802 acre-feet of water conserved will help meet the demands during drought years and will allow Sunrise to stop over-diverting water from the Provo River.

E.1. Technical Proposal: Evaluation Criteria

E.1.1. Evaluation Criterion A – Quantifiable Water Savings (30 Points)

Quantifiable Water Savings

Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

The estimated amount of water now lost to seepage that is expected to be conserved by replacing the old galvanized corrugated metal pipe (CMP) and piping a small area of open ditch is 802 acre-feet.

Describe current losses. Explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground).

Seepage losses in the ditch are currently lost to deep percolation as water is lost onto the ground from the CMP and seepage into the ditch bottom. Much of this water will eventually make its way back to the Provo River or into the Jordanelle Reservoir.

Describe the support/documentation of estimated water savings. Provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

The proposed project includes 7,300 feet of 30-inch CMP constructed in the 1950s and 1970s. It also includes 500 feet of open and unlined ditch below the CMP. The Project Location Map above in Figure 4 depicts both the CMP section and open ditch sections as Phase 1, and it also shows Phase 2, which is unlined earthen ditch.

Water savings within the CMP are calculated based on a water loss study performed by J-U-B Engineers, Inc. on July 18, 2018. The section studied was the section currently piped with CMP. Flows were measured using a velocity probe to measure water velocity and calculating water flow rate using the cross-sectional flow area measured within the pipe.

There are other peculiarities that exist on this ditch in the way it is operated that affect water loss. The measurement flume on the ditch that is monitored by the state is located approximately 4,350 feet below the outlet of the CMP. Sunrise diverts more than their water right out of the Provo River to ensure they have their allocated water right at the location where their water is measured. Approximately 1,250 feet upstream of the measurement location, a portion of the water from the ditch can be dumped back into Bench Creek as needed to achieve the proper flow measurement at the flume (Bench Creek flows back to the Provo River.) On July 18, 2018, Sunrise was diverting 11.38 cfs at the river and measuring 2.32 cfs at the flume (The average

flow at the flume as reported by the State of Utah for 2018 was 2.76 cfs). It is typical for Sunrise to have to divert extra flow at the river to account for water loss in the CMP to have enough flow at the flume. There is no historical flow record above the flume, but the ditch operator indicated that the flow on July 18 was typical. Therefore, for the flow loss calculations above the spill location on Bench Creek, 11.38 cfs will be used.

Table 1 below includes the flows measured on July 18, 2018, and calculated annual losses in the CMP.

Table 1 Annual Water Loss

Location	Measured Flow (cfs)	Loss (cfs)	Irrigation Days	Annual Loss (AF)
CMP Inlet	11.38		183	
CMP Outlet	9.17	2.21		802

Canal Lining/Piping

a. *How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*

The assumption is that 100 percent of the water currently being lost due to the CMP leaking and open ditch seepage losses will be saved. The result is 802 acre-feet of water saved annually. The previous section describes how water loss in each of the three sections of the canal were estimated.

CMP Section – These water losses were measured in the field on July 18, 2018. The assumption made was that the flow on this day represents an average diversion from the river into the CMP section. This assumption is based on the fact that the flow measured at the flume on that day and the average 2018 flume measurement from state data are similar. Also, the operator observed that the flow on that day appeared to represent a typical flow rate diverted from the river. The flow loss measured was 2.21 cfs, which represents 802 acre-feet over a 183-day season.

Photo 4 Water losses out of the CMP



- b. *How have average annual canal seepage losses been determined? Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals.*

The average flow, as measured at the flume, was comparable to the average annual flow rate through the flume (2.32 cfs on July 18, 2018, compared to the average annual flow rate of 2.76 cfs). The flow at the flume is monitored daily throughout the irrigation season by the State of Utah. Because these flows are comparable, it was assumed that the flows on July 18 represent an average annual flow, and all data collected that day was applied across the 183-day irrigation season.

- c. *What are the expected post-project seepage/leakage losses and how were these estimates determined (e.g., can data specific to the type of material being used in the project be provided)?*

The water system will be piped and enclosed with fused HDPE pipe; therefore, no seepage, evaporation, or spills will occur in the delivery system.

- d. *What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?*

Annual transit losses are 543 acre-feet per mile (802 acre-feet/1.48 miles=543 {rounded up}).

- e. *How will actual canal loss seepage reductions be verified?*

Seepage loss reductions will be verified through monthly meter readings. There will be a system meter installed on the main pipeline, and the data will then be analyzed and compared monthly to the historical meter reading and to the estimated water losses. This comparison will determine the amount of water conserved.

- f. *Include a detailed description of the materials being used.*

- 7,800 feet of 26-inch HDPE DR-41 pipe.
- 1 mainline meter
- 1 inlet Structure

E.1.2. Evaluation Criterion B – Water Supply Reliability (18 Points)

Address how the project will increase water supply reliability. Provide sufficient explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:

- *Will the project address a specific water reliability concern? Please address the following:*
 - *Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?*

The main water reliability concerns that the project will address are seepage, drought, and the age and condition of the existing irrigation canal system.

Seepage – Because the system is comprised of CMP and open, unlined ditches, and a portion of the system is located along the River and constructed in highly permeable, unconsolidated surficial deposits, seepage occurs, causing an estimated 802 acre-feet to be lost out of the 4,130 acre-feet of water that is diverted over the course of the irrigation season.

Drought – Over the past eight years, Summit County has had some of the driest summers, accompanied by scorching temperatures and wildfires. Local farmers and ranchers are struggling to make ends meet, and with the hay harvest being down, they must buy more hay or sell off more livestock than they would have under normal conditions. Sunrise has had to reduce watering times during the most critical irrigation months of the season, which is having an impact on the area’s farms and ranches.

Age and condition of existing irrigation canal system – The corrugated metal pipe is 50 to 70 years old, rusty, constantly leaking, and in danger of failing. The pipe was severely damaged during the most recent rockslide. The unlined, open dirt ditch is constantly in need of cleaning due to vegetation and sediment.

- *Describe how the project will address the water reliability concern? In your response, address where the conserved water will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

As an immediate result of this project, it is anticipated that water will be left in the Provo River and then stored in Jordanelle Reservoir for an extended period of time. It is anticipated that much of the conserved water will stay in the Provo River System due to the fact that Sunrise will no longer have to over-divert hundreds of acre-feet of water to receive their water share down through the system.

Additional savings will be in not having to use shares from CUWCD. Some Sunrise shareholders own shares from CUWCD storage water in the Jordanelle system. Because of the repeated water losses and drought, these shareholders have had to use or consider using the CUWCD water right. By eliminating seepage losses, it is expected that those shareholders with CUWCD shares will not need to use those water rights. This Project will allow for shareholders to continue to conserve water in the CUWCD system and allow for greater water reliability.

- *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*
The water conserved through the elimination of seepage, spillage, and evaporation will be delivered back into the river system as over-diverting of water out of the Provo River will no longer be required.
- *Indicate the quantity of conserved water that will be used for the intended purpose.*
The quantity of conserved water that will be used for irrigating land within the Sunrise service area is expected to be the full 802 acre-feet saved by piping.

- *Will the project make water available to achieve multiple benefits or to benefit multiple water users?*

Consider the following:

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

The project will benefit agriculture, recreation, and environmental users by allowing more water in the Provo River and eventually into the Jordanelle Reservoir.

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.*

The project allows more water to stay in the Provo River for longer periods of time during the summer months, which could have a positive impact on the fish habitats in the river. The proposed project actions are unlikely to take place in and/or disturb habitat for endangered species. The CMP will not be removed but will have a pipe slip lined through it, requiring very little disturbance.

A number of migratory birds exist in the general vicinity and nests may be in or adjacent to project disturbance areas; however, mitigation measures, such as timing vegetation clearing to take place outside of the migratory birds' nesting season and preconstruction nest surveys, will be conducted to minimize any potential impacts to nesting birds.

- *Will the project benefit a larger initiative to address water reliability?*

The State of Utah has a goal of 25% conservation by the year 2050. This project will help the State move towards this goal, as Sunrise has 802 acre-feet of water savings annually from this project.

- *Will the project benefit Indian tribes?*

No, the project will not directly benefit any tribes; however, all water conservation in the Provo River Basin will have some sort of benefit, primarily through the drought years.

- *Will the project benefit rural or economically disadvantaged communities?*

Yes, the project will benefit rural communities served by the Sunrise canal system, which includes rural areas in the unincorporated Summit County.

- *Describe how the project will help to achieve these multiple benefits. In your response, please address where the conserved water will go where it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

The conserved water from this project will be left in the river and eventually stored within the Jordanelle Reservoir for other water users and for recreation opportunities.

- *Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?*

Yes. This project is important to all the shareholders, as well as to the Provo River Water Users' Association and the Central Utah Water Conservancy District. The main purpose for the collaboration is because of the large amount of water savings and the ability to know that water can consistently be delivered without fear of a breach in the 70-year-old CMP. If a breach were to happen in the CMP, there would be no water for any of the irrigators.

- *Is there widespread support for the project?*

There was a stockholder meeting held on August 2019, during which the proposed project and anticipated costs were presented. Over 90 percent of the stockholders were present at the meeting, and voting was nearly unanimous in favor of the project.

- *What is the significance of the collaboration/support?*

Provo River Water Users' Association, Kamas Valley Conservation District, NRCS, shareholder, residents, and others are in support of this long-overdue project. The impact that this project will have on the rural community of Woodland and the irrigators is significant for two fundamental reasons: 1 - the amount of water that is being lost from the system that could be used to water crops and produce hay and feed for livestock of the farmers and ranchers of Sunrise & Bench Creek Irrigation. 2 – Economic hardship on the boutique farms in the form of increased overhead costs due to the need to buy feed for their livestock at much higher prices than if they could have produced their own feed.

- *Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?*

Yes, Kamas City has expressed interest in the implementation of this project. The City will be conducting a feasibility study to consider pressurized irrigation throughout the City. The development of this project helps Kamas understand the cost and implementation process that they may need to go through with their irrigation system.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

There was tension over the water ever since water turns had to be reduced, but this has required the irrigators to work together more than ever before. In the early years of the drought, there was more conflict, but irrigators have learned to work with each other and have assisted one another to make sure everyone has water enough for their farms and ranches. Conflict is something Sunrise & Bench Creek Irrigation works very hard to avoid by communicating early in the irrigation season; and so far, it has turned out well for this irrigation group.

- *Describe the roles of any partners in the process. Please attach any relevant supporting documents.*

Provo River Water Users' Association is in favor of this project and will be part of the environmental review process to consult and access any needed information. CUWCD is also in favor of this project and will consult with Sunrise as needed. Please see Attachment C Letters of Support

- *Will the project address water supply reliability in other ways not described above?*
No, the project will not address water supply reliability in other ways not described above.

E.1.3. Evaluation Criterion C – Implementing Hydropower (18 Points)

If the proposed project includes construction or installation of a hydropower system, please address the following: Describe the amount of energy capacity. For projects that implement hydropower systems, state the estimated amount of capacity (in kilowatts) of the system. Provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

The project will increase the production of hydropower by constructing an underwater micro-hydro turbine station that will produce 100 kWh of energy. The power will be used at the diversion and measuring station on the canal to meet the power needs of the system at that remote location.

Describe the amount of energy generated. For projects that implement hydropower systems, state the estimated amount of energy that the system will generate (in kilowatt-hours per year). Provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

The underwater micro-hydro turbine station that will produce 2.4 kWh of energy per day. The small hydro turbine will be installed in the channel just upstream of the screening structure where the flows will be the highest in the system prior to spilling diverted river water back to the river before the screening structure. This will maximize the energy production. The channel will be narrowed at that point to ensure a velocity of at least 13.5 feet per second. This velocity will produce 2.4kWh of energy per day. Sunrise has a water right for 183 days.

2.4kWh x 183 days =439 kWh/year

Describe any other benefits of the hydropower project. Describe and provide sufficient detail on any additional benefits expected to result from the hydropower project, including:

- *Any expected reduction in the use of energy currently supplied through a Reclamation project*
The amount of power generated with this project is small enough that it will not have any impact on Reclamation’s power generation facilities.
- *Anticipated benefits to other sectors/entities.*
Power to run the meter will allow for improved SCADA readings.
- *Expected water needs, if any, of the system*
There won’t be any additional water needed beyond the required flow through the system for irrigation.

E.1.4. Evaluation Criterion D – Complementing On-Farm Irrigation Improvements (10 Points)

If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:

- *Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.*
 - *Provide a detailed description of the on-farm efficiency improvements.*
Currently, there is one irrigator who is still using flood irrigation. This irrigator plans on consulting with NRCS about implementing sprinkler irrigation on his farm. This farmer’s property is not directly supported by the proposed project; however, he is still interested in on-farm irrigation improvements.

- *Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?*

Upon completion of the proposed WaterSMART project, the irrigators intend to request technical or financial assistance from NRCS for installing new systems and upgrading their existing sprinkler irrigation systems. Many farmers intend to contact or have already contacted NRCS regarding eligibility for EQIP funding to upgrade their existing systems.

- *If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs.*

See Attachment D On-Farm Signatures and Acreage.

- *Applicants should provide letters of intent from farmers/ ranchers in the affected project areas.*

The proposed WaterSMART project will not directly facilitate the on-farm improvements. Upgrades to sprinkler irrigation systems will still require pumps or ponds to have the pressure to run sprinklers. The irrigator will be responsible for seeking NRCS funding to implement upgrades to their on-farm irrigation practices.

- *Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.*

- *Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installation of a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip irrigation.*

N/A

OR

- *Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?*

Yes. All but one irrigator is now sprinkling. The landowners have seen the success and yields that have come from sprinkling the ground; however, many of existing systems are 30-plus-years old and need to be updated to be more efficient, and possibly have an opportunity for drip irrigation. This project will facilitate conversations with NRCS about those possibilities.

- *Describe the on-farm water conservation or water use efficiency benefits that would result from the on-farm component of this project.*

- *Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*

46 acres are currently being flood irrigated that can be converted to sprinkler irrigation. This conversion has the potential to save 20 acre-feet, as demonstrated in the following table:

Average Annual Flow Delivery per Acre	2.65 gpm
Total Flood Irrigated Acres	46 Acres
Annual Volume to Flood Irrigated Acres	80.7 AF
Assumed Flood Irrigation Efficiency	50%
Assumed Sprinkler Irrigation Efficiency	75%
Flood vs. Sprinkler Efficiency Difference	25%
Water Lost to Inefficient Application (80.7 x 25%)	20.2 AF

E.1.5. Evaluation Criterion E – Department of the Interior Priorities (10 Points)

Address those priorities that are applicable to your project. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the Priority(ies) is well supported in the proposal.

1. Utilizing our natural resources

The proposed project will ensure American Energy is available to meet our security and economic needs by constructing an underwater micro-hydro turbine station that will use natural streamflow in the canal to produce power for meters and screening structures.

2. Modernizing our infrastructure

The proposed project extends a public/private partnership between Sunrise & Bench Creek Irrigation, Reclamation, and Utah Division of Water Resources (DWR_e). This partnership, which supports the White House Public/Private Partnership Initiative to modernize U.S. infrastructure, will allow Sunrise to modernize their system and bring them into the twenty-first century. The development of this project will:

- Cut maintenance times and solve issues related to old CMP and unlined ditch – extreme water losses, weeds, debris, and sediment.
- Allow real-time water tracking and metering with the new meter for the inlet.
- Reduce water losses and conflicts with recreational water users by allowing the over-diverted water to return to the Provo River within just a few hundred feet instead of thousands of feet.
- Provide opportunities to upgrade 30-year-old sprinkling equipment and increase irrigation efficiency

E.1.6. Evaluation Criterion F – Implementation and Results (6 Points)

E.1.6.1. Subcriterion No. F.1 – Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Please self-certify, or provide copies of these plans where appropriate to verify that such a plan is in place.

Sunrise does not have a Water Conservation Plan or SOR of their own but has continually participated in planning with the larger districts around them, including the Provo River Water Users' Association. Sunrise attends planning meetings and takes advantage of any other opportunities that allow them to be part of understanding the needs for the future.

Provide the following information regarding project planning:

- 1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, or other planning efforts done to determine the priority of this project in relation to other potential projects.*

In 2018, Sunrise prepared an evaluation of their system that assessed the water losses, opportunities to pressurize the system and to make the system more efficient. Their system was modeled, mapped, and project and cost estimates developed. The Board prioritized the projects. Because of the simplicity of their system, they choose to prepare an evaluation of the system that would allow them to have projects that could be phased or taken on all at once. The Board prioritized the projects, as they thought they could afford to build based on funding and shareholder fees. This project was a combination of phases and listed as their highest priorities. Please see Attachment E Project Priority List and Map.

- 2) *Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

Central Utah Water Conservancy District Prepare 60 Plan has three main focuses:



Protect what we have

- Repair and replacement of existing infrastructure
- Watershed and water source protection



Use it wisely

- Water conservation – efficient use of a precious resource



Provide for the future

- New water sources and development of new infrastructure

This project provides for all three focuses by replacing existing infrastructure, conserving 802 acre-feet of water, and reducing the amount of water taken from the Provo River that arrives in their system just to be lost to the ground. This project will allow Sunrise to leave water in the Provo River for future use instead of being over-allocated and lost to the ground as it travels through the 70-year-old CMP for 1.45 miles. This allows Sunrise to help provide water for the future.

E.1.6.2. Subcriterion No. F.2 – Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved).

This project has meters within the system that will be used to measure water use within the main diversion system. An inflow/outflow test over the irrigation season will be done to determine water what enters the system and what water leaves the system. The water will be metered to account for the volume/flow rates. These will be compared with the historical volumes and flow rates diverted from the river and will give a comparison by which to verify water savings. After the pipe is installed, it will be filled with water and all of the turnouts closed. The system meter will be checked to verify that it is reading zero and that there are no losses in the closed system.

An assessment of the estimated power from the hydro turbine will be developed with a projected timeline (May-September) in which the turbine would be in operation to calculate the amount of kWh that will be generated. The performance measures will be based on calculations that make a comparison of the actual number of kWh that will be recorded on the meter. A reading of the meter will be made monthly and recorded. Then, a calculation and comparison will be established to show the performance measures. These monthly reports will be summarized annually in October and reported to the Sunrise Board.

E.1.6.3. Subcriterion No. F.3 – Readiness to Proceed

Describe the implementation plan of the proposed project. Include an estimated project schedule that show the stages and duration of the proposed work, including major tasks, milestones, and dates.

February/March 2020 – September 2020

Notice of Award Letter – Feb/Mar 2020

Agreement – July 2020

Notice to Proceed – July 2020

Commence EA – July 2020

Commence Design – July 2020

October 2020 – September 2021

50% Design Review – December 2020

90% Design Review – May 2021

Complete EA (FONSI Issued) – July 2021

100% Design Review – July 2021

Advertise Project – August 2021

Bid Project – September 2021

October 2021 – October 2022

Commence Construction – October 2021

Construction Substantial Completion – May 2022

Construction Final Completion – October 2022

Describe any permits that will be required, along with the process for obtaining such permits

There will be two permits that need to be obtained for this project. They have been explained in detail within the section listed as “Required Permits.” These permits are for excavation – cutting into roads and conditional use – any construction of any kind that takes place in Summit County. Both of those permits are from Summit County and are required after final design is completed. They will require a review of the entire project by the county planning commission and county engineer.

Identify and describe any engineering or design work performed specifically in support of the proposed project.

A model of the system was performed to help develop the estimated cost and pipe sizing. In addition, a limited water loss study was prepared to understand the losses within the system for preparation of this application.

Describe any new policies or administrative actions required to implement the project.

The only new administrative action required would be to increase shareholders fees to have available funds to pay back a loan that would be necessary for the matching funds.

Describe how the environmental compliance estimate was developed. Has the compliance cost been discussed with the local Reclamation office?

Cost estimates are based on the past fifteen environmental reports that J-U-B Engineers, Inc. has completed for WaterSMART Projects in the past six years, three of which have been completed within 35 miles of the Woodland area. They include Marion Ditch Company, East Wanship, and Echo Ditch.

E.1.7. Evaluation Criterion G – Nexus to Reclamation Project Activities (4 Points)

Is the proposed project connected to Reclamation project activities? If so, how? Please consider the following:

- *Does the applicant receive Reclamation project water?*

No.

- *Is the project on Reclamation project lands or involving Reclamation facilities?*

No, not directly; however, the water that is conserved can maintain instream flows through the Provo River and facilitate the augmentation of water that is stored in Jordanelle Reservoir and eventually Deer Creek Reservoir.

- *Is the project in the same basin as a Reclamation project or activity?*

Yes, the project is in the Provo River Basin where a number of Reclamation projects are located.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*
Yes, as the project conserves water and reduces losses, Sunrise can maintain instream flows within the Provo River, which will help contribute to the storage and potential flows in the Jordanelle and Deer Creek Reservoirs. It will also allow for and enhance habitats and recreational opportunities within the Provo River Basin. Conserved water will be delivered through the Provo River to Jordanelle Reservoir, which is a Reclamation project.

Will the project benefit any tribe(s)?

No, the project will not directly benefit any tribes; however, all water conservation in the Provo River Basin will have some sort of benefit, primarily through the drought years.

E.1.8. Evaluation Criterion H – Additional Non-Federal Funding (4 Points)

State the percentage of non-federal funding provided using the following calculation: Non-Federal Funding divided by Total Project Cost.

$$\frac{\$658,500}{\$1,196,500} = 55\%$$

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained.

Identify the sources of the non-Federal cost share contribution for the project, including:

- *Any monetary contribution by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)*

Sunrise has committed \$98,775 from their cash reserve account that is required as they request a loan from Utah Division of Water Resources (DWRe). They made application in October 2019 for a loan for \$559,725.

- *Any costs that will be contributed by the applicant*

Sunrise is required to contribute 15 percent of the project cost when they receive a loan from DWRe. This above any grant funds received from Reclamation or any other granting agency. Sunrise will be coming with \$98,775 cash fund from their own shareholders.

- *Any third party in-kind costs (i.e., goods and services provided by a third party)*

There are no incurred in-kind project costs included in this project.

- *Any cash requested or received from other non-Federal entities*

N/A

- *Any pending funding requests (i.e. grants or loans) that have not yet been approved, and explain how the project will be affected if such funding is denied*

As stated above, a loan application will be submitted to DWRe within the next month. Sunrise has been in communication with Water Resources, who funds more than 90 percent of submitted loan requests. For a project with such significant water and energy savings, Sunrise feels confident that they will receive the loan from DWRe. If the funding were to be denied, they would look to the open market.

In addition, identify whether the budget proposal includes any project costs that have been or may be incurred prior to award. For each cost, describe:

- *The project expenditure and amount*

Sunrise expects to start the environmental review as soon as awards are announced. If they are awarded these funds, they will be incurring the cost to prepare the environmental review. Before preparing a final contract with Sunrise, DWRe also requires that they have 90 percent of the design completed. This may also be a pre-award cost.

- *The date of cost incurrence*

August 2020 Start of the Environmental Review \$40,000

September 2020 Start of the Design \$80,000

- *How the expenditure benefits the Project*

The advancement of the environmental design will allow the cultural survey and other important surveys before the snow is on the ground. As stated earlier, Sunrise will need the design to obtain the final contract with DWRe for the requested loan.

Budget Proposal

Table 2 – Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funding	\$538,000
Costs to be paid by the applicant	\$656,500
Value of third party contributions	\$0.00
Total Project Cost	\$1,196,500

Table 3 – Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
Salaries and Wages	0.00			\$0.00
Fringe Benefits	0.00			\$0.00
Equipment	0.00			\$0.00
Supplies and Materials	0.00			\$0.00
Contractual /Construction				
Engineering				\$200,000
Design 8%	\$76,000	1	EA	\$80,000
NEPA Compliance 4%	\$38,000	1	EA	\$40,000
Construction Management 8%	\$76,000	1	EA	\$80,000
Construction				\$996,500
Mobilization	\$91,000	1	EA	\$91,000
26" HDPE DR 41 Pipe	\$63.00	7,800	LF	\$491,400
Fittings	\$30,000	1	EA	\$30,000
26" HDPE Bends	\$4,000	10	EA	\$40,000
Thrust Blocking	\$4,000	10	EA	\$40,000
Air Vents	\$7,800	7	EA	\$50,700
Inlet Structure	\$137,000	1	EA	\$137,000
Temporary Outlet Structure	\$67,000	1	EA	\$67,000
Meter Station	\$20,000	1	EA	\$20,000
Micro Hydro	\$6,000	1	EA	\$6,000
Reseeding	\$1.50	7,800	LF	\$11,700
Dewatering	\$1.50	7,800	LF	\$11,700
Third-Party In-Kind Contributions				\$0.00
Other				\$0.00
Total Direct Costs				\$1,196,500
Indirect Costs				\$0.00
Type of rate	Percentage	\$base		\$0.00
Total Estimated Project Costs				\$1,196,500

Budget Narrative

Salaries and Wages

No separate salaries or wages outside of contractual costs will be included.

Fringe Benefits

No separate fringe benefits will be included.

Travel

No separate travel costs will be included.

Equipment

No separate equipment costs will be included. All costs are included in the contractual contracts.

Materials and Supplies

No separate materials and supplies costs will be included. All costs are included in the contractual contracts.

Contractual

To determine unit costs, which were included in the cost estimate for this project, Sunrise relied upon the preliminary evaluation plan that was prepared in 2018. Contract unit prices from similar projects recently completed were used by the engineering firm to estimate those costs. Sunrise will follow the State of Utah procurement process for procuring a contractor for this project. They will bid the construction portion of the project to several prequalified construction companies. The contractual costs shown are estimates for each of the components to furnish and install all the pipe, meters, and other items. Generally, the low bidder will be selected based on a determination of acceptable qualifications.

Third-Party In-Kind Contributions

No third-party in-kind contributions will be included.

Environmental and Regulatory Compliance Costs

The total environmental review cost is set at 4 percent of the project at \$40,000. It is expected that it will take \$32,000 to evaluate the required information, prepare the report, and update any changes required from reclamation. Also included is \$8,000 set aside for Reclamation to review the report. The 4 percent is based on past cost for environmental reviews. The \$8,000 for review is only an estimate. It is anticipated that it could take less based on past experience.

Other Expenses

No other charges will be included.

Indirect Costs

No indirect costs will be part of the proposed project.

Total Costs

Sunrise Portion: \$658,500 Fed Portion: \$538,000 Total: \$1,196,500

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

Impacts will be those associated with piping the Sunrise system. In the past, similar projects have had minimal impacts. The surface vegetation will be restored upon completion of the project.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

Sunrise is not aware of any impacts concerning threatened or endangered species in this area.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.

Sunrise is not aware of any impacts to wetlands in this area.

When was the water delivery system constructed?

Many improvements have been made over the years as part of the maintenance of the CMP pipe and unlined open ditch. The CMP was installed in the 1950s and 1970s. As part of the completed environmental document, the required historical documentation for the project will be completed.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

In addition to the piping of the Sunrise irrigation system, a new inlet and system meter will be installed. The existing settling pond will be widened, and the Parshall Flume will be removed. The existing diversion will remain unchanged.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

A cultural resource inventory will be completed as part of the submitted environmental document.

Are there any known archeological sites in the proposed project area?

Sunrise is not aware of any impacts to or locations of archeological sites.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

No, the project will not require a right-of-way or relocations from adjacent properties and will have no impact on residential uses within the study area.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

No.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No.

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Summit County Conditional Use Permit – The County requires a conditional use permit for any pipe over 16 inches. This will require meeting with the planning commission to request the permit. This is a standard permit granted by the County for the installation of larger diameter piping within the County.

Summit County Excavation Permit – The Summit County engineer requires this permit for any construction within the County. This will require a review of the final design plans by the County’s engineering department. This is a typical permit for any construction activity within the County.

Letters of Project Support

Include letters from interested stakeholders supporting the proposed project.

Letters of support have been included from the following, found in Attachment C Letters of Support:

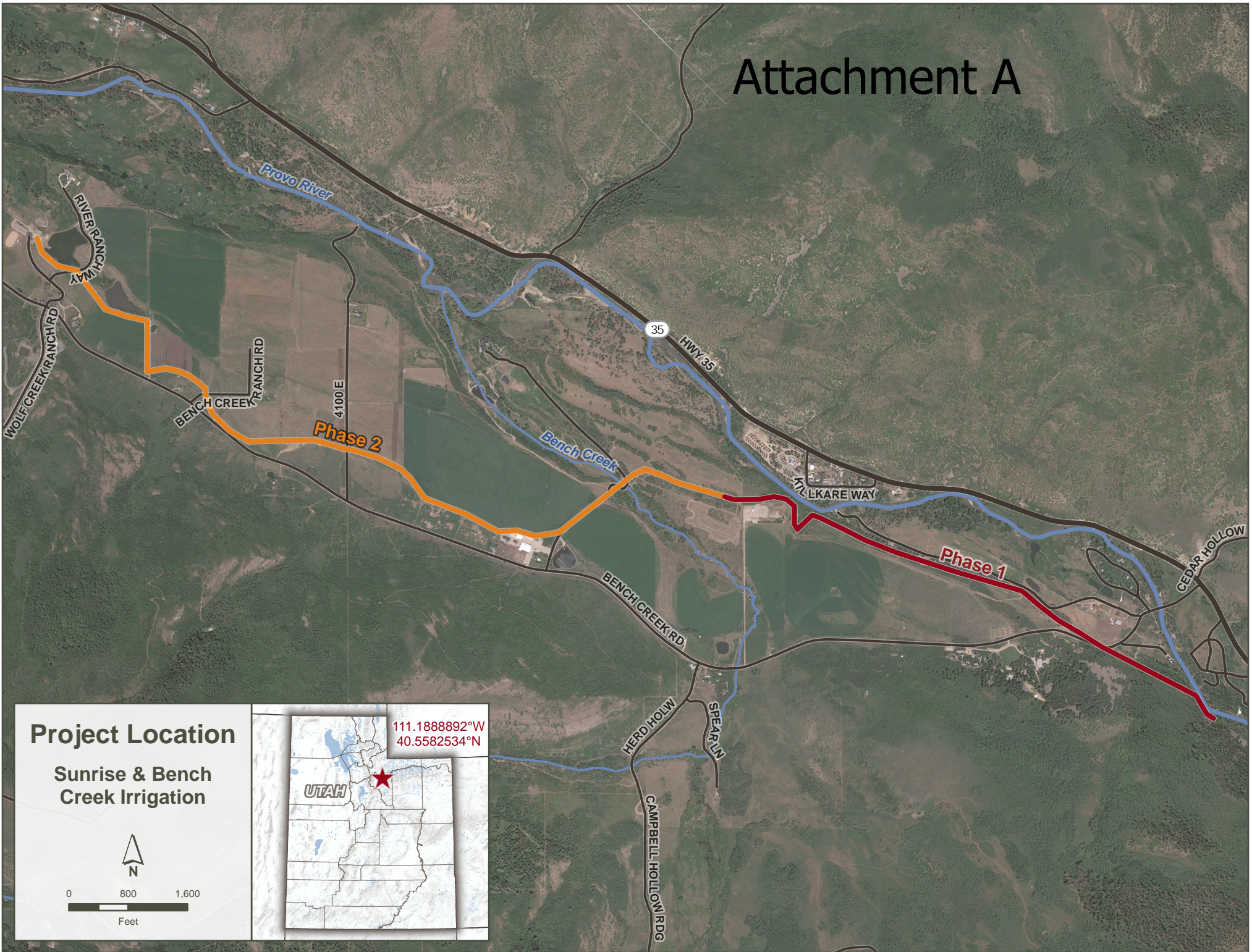
Provo River Water Users’ Association
Central Utah Water Conservancy District

Official Resolution

Include an official resolution adopted by the applicant’s board of directors or governing body. The official resolution may be submitted up to 30 days after the application deadline.

The Official Resolution for the Sunrise & Bench Creek Irrigation Company Piping and Small Hydro Project will be submitted within 30 days after the application deadline.

Attachment A



Project Location

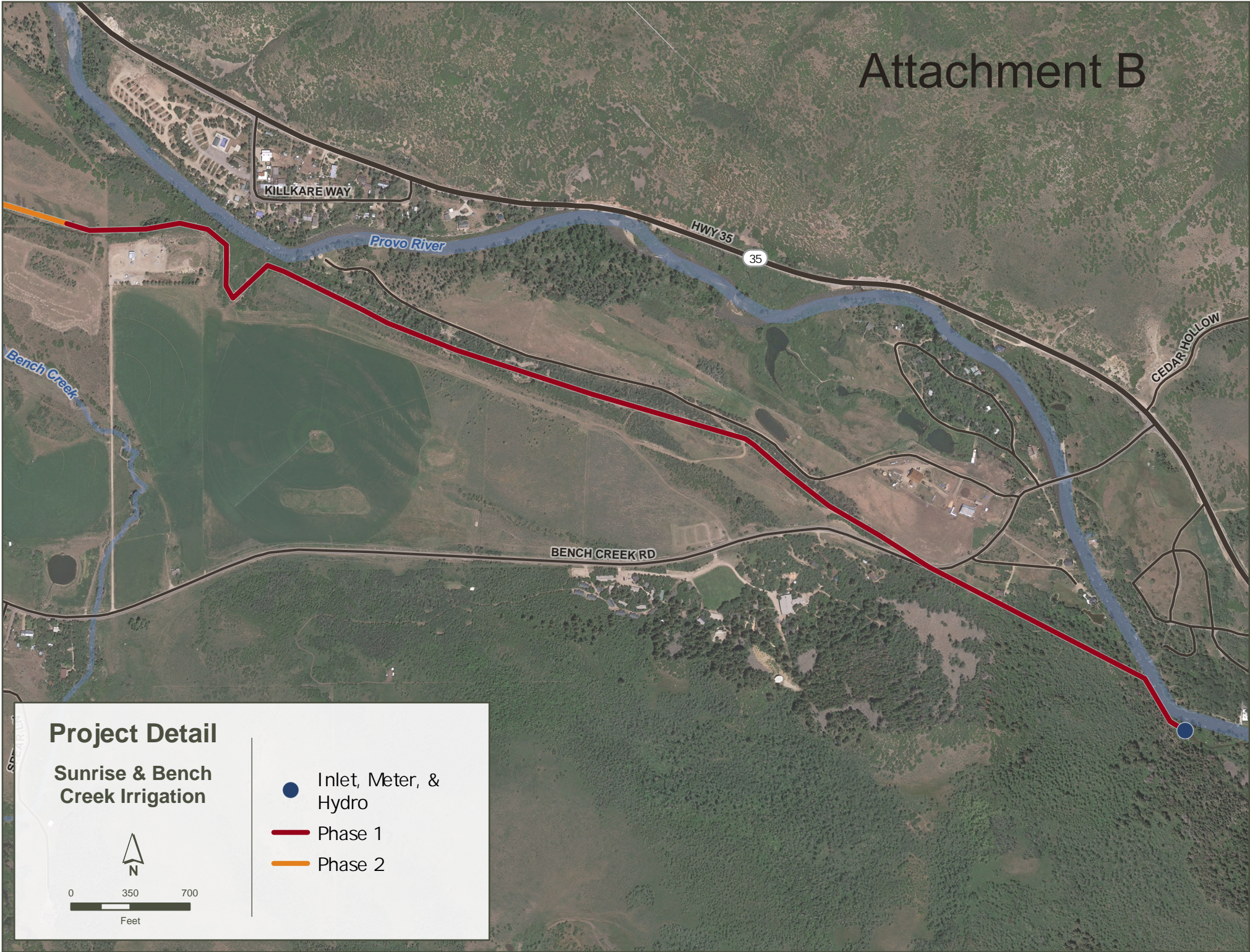
Sunrise & Bench
Creek Irrigation

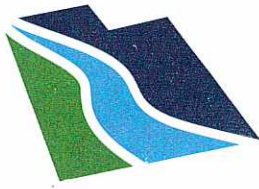


0 800 1,600
Feet



Attachment B





CENTRAL UTAH WATER
CONSERVANCY DISTRICT

OFFICERS
N. Gawain Snow, President
Tom Dolan, Vice President

March 12, 2019

Mr. DeLoy Bisel
Sunrise and Bench Creek Irrigation Company
4639 E. Bench Creek Rd.
Woodland, UT 84036

Subject: Letter of Support for Sunrise and Bench Creek Irrigation Company Water and Energy Efficiency Project

TRUSTEES
G. Wayne Andersen
Roddie (JR) Bird
E. James (Jim) Bradley
Shelley Brennan
Max Burdick
Kirk L. Christensen
Steve Farrell
Tom Dolan
Nathan Ivie
Bill Lee
Al Mansell
Michael J. McKee
Greg McPhie
Aimee Winder Newton
Edwin Boyd Sunderland
Gawain Snow
Byron Woodland
Boyd Workman

Dear Mr. Bisel:

Central Utah Water Conservancy District (CUWCD) is pleased to write this letter of support for your grant application being submitted to the Bureau of Reclamation Water and Energy Efficiency Grants Program. We applaud your efforts to replace your corrugated metal pipe with modernized piping infrastructure to increase the efficiency and safety of your system to conserve and safeguard valuable water resources.

CUWCD works with three of the state's largest water conservancy districts in the Prepare 60 Securing Utah's Economic Future program. This effort focuses our work to protect, conserve, and provide water resources to meet Utah's future needs. Your project addresses all three of these concepts by replacing aging infrastructure and conserving a substantial quantity of water, both of which help to provide for the future of Utah. One important feature of your project will be keeping more water in the Provo River facilitated by improved infrastructure and metering.

Central Utah Water recognizes the importance of conserving our water resources. The water saved through this improvement project will be of benefit to water users and the regional environment. We support your efforts.

We strongly recommend this grant application and appreciate the advancements it will make in improving water efficiency within the boundaries of the Central Utah Water Conservancy District.

Sincerely,

Gene Shawcroft, P.E.
General Manager\CEO



PROVO RIVER
WATER USERS
ASSOCIATION

BOARD OF DIRECTORS
TOM GODFREY, PRESIDENT
CHRISTOPHER R. TSCHIRKI, VICE PRESIDENT
LAURA BRIEFER
JEFFREY J. BRYANT
JOAN DEGIORGIO
MICHAEL J. DEVRIES
ARTHUR D. HUNTER
DAN JOHNSON
DONALD Y. MILNE
TOM WARD

March 5, 2019

G. KEITH DENOS, GENERAL MANAGER

Mr. DeLoy Bisel
Sunrise and Bench Creek Irrigation Company
4639 E. Bench Creek Rd.
Woodland, UT 84036

RE: Letter of Support for Water and Energy Efficiency Project

Dear Mr. Bisel,

Provo River Water Users Association is pleased to write in support of your grant application being submitted to the Bureau of Reclamation Water and Energy Efficiency Grants Program. We applaud your efforts to modernize the diversion infrastructure and delivery piping to increase the efficiency of your system to more efficiently utilize Provo River water resources.

Provo River Water Users Association recognizes the importance of efficient resource utilization within the Provo River basin. The anticipated water savings through this improvement project will be of benefit to water users and the regional environment. We support your efforts to conserve and efficiently use our precious water resources in the Provo River drainage.

Sincerely,
Provo River Water Users Association

Jeffrey D. Budge, P.E.
Operations & Engineering Manager

Via Email:

Cc G. Keith Denos, P.E. General Manger

Attachment E

Sunrise & Bench Creek
 Piping Project - Phase 1 - CMP Slip Lining

February-19

Engineer's Opinion of Probable Cost

Item	Description	Unit	Total Quantity	Engineer's Opinion of Probable Cost	
				Unit Price	Amount
General					
	Mobilization	LS	1	\$70,000.00	\$ 70,000.00
	General Subtotal				\$ 70,000.00
Typical Pipe					
	26" HDPE DR 41 PIPE	LF	7000	\$63.00	\$ 441,000.00
	Pipe Subtotal				\$ 441,000.00
Fittings					
	Fittings	LS	1	\$40,000.00	\$ 40,000.00
	Fittings Subtotal				\$ 40,000.00
Turnouts					
	Turnout Assembly with Meter & RTU	EA	1	\$25,000.00	\$ 25,000.00
	Structures Subtotal				\$ 25,000.00
Structures					
	Inlet Structure	EA	1	\$150,000.00	\$ 150,000.00
	Meter Station	EA	1	\$20,000.00	\$ 20,000.00
	Structures Subtotal				\$ 170,000.00
Miscellaneous					
	Micro Hydro	EA	1	\$15,000.00	\$ 15,000.00
	Clear & Grub	LS	1	\$10,000.00	\$ 10,000.00
	Miscellaneous Subtotal				\$ 25,000.00
	CONSTRUCTION SUBTOTAL				\$ 771,000.00
	Design				\$ 62,000.00
	NEPA Compliance				\$ 31,000.00
	Construction Management				\$ 62,000.00
	TOTAL INDIRECT COSTS				\$ 155,000.00
	TOTAL				\$ 926,000.00

Engineer's Opinion of Probable Cost

Item	Description	Unit	Total Quantity	Engineer's Opinion of Probable Cost	
				Unit Price	Amount
General					
	Mobilization	LS	1	\$70,000.00	\$ 70,000.00
	General Subtotal				\$ 70,000.00
Typical Pipe					
	26" HDPE DR 41 PIPE	LF	3350	\$63.00	\$ 211,100.00
	24" HDPE DR 41 PIPE	LF	3350	\$54.00	\$ 180,900.00
	12" HDPE DR 32.5 PIPE	LF	2250	\$29.00	\$ 65,300.00
	10" HDPE DR 32.5 PIPE	LF	1600	\$24.00	\$ 38,400.00
	Pipe Subtotal				\$ 495,700.00
Fittings					
	Fittings	LS	1	\$50,000.00	\$ 50,000.00
	Fittings Subtotal				\$ 50,000.00
Turnouts					
	Turnout Assembly with Meter & RTU	EA	4	\$25,000.00	\$ 100,000.00
	Structures Subtotal				\$ 100,000.00
Miscellaneous					
	Clear & Grub	LS	1	\$50,000.00	\$ 50,000.00
	Furnish Imported Trench Backfill Type A1	TON	2,400	\$20.00	\$ 48,000.00
	Furnish Foundation Type A5	TON	200	\$20.00	\$ 4,000.00
	Miscellaneous Subtotal				\$ 102,000.00
	CONSTRUCTION SUBTOTAL				\$ 817,700.00
	Design				\$ 65,000.00
	NEPA Compliance				\$ 33,000.00
	Construction Management				\$ 65,000.00
	TOTAL INDIRECT COSTS				\$ 163,000.00
	TOTAL				\$ 980,700.00

Engineer's Opinion of Probable Cost

Item	Description	Unit	Total Quantity	Engineer's Opinion of Probable Cost	
				Unit Price	Amount
General					
	Mobilization	LS	1	\$30,000.00	\$ 30,000.00
	General Subtotal				\$ 30,000.00
Typical Pipe					
	12" HDPE DR 32.5 PIPE	LF	8000	\$29.00	\$ 232,000.00
	Pipe Subtotal				\$ 232,000.00
Fittings					
	Fittings	LS	1	\$20,000.00	\$ 20,000.00
	Fittings Subtotal				\$ 20,000.00
Structures					
	Inlet Structure	EA	1	\$100,000.00	\$ 100,000.00
	Meter Station	EA	1	\$20,000.00	\$ 20,000.00
	Structures Subtotal				\$ 120,000.00
Miscellaneous					
	Micro Hydro	EA	1	\$20,000.00	\$ 20,000.00
	Clear & Grub	LS	1	\$50,000.00	\$ 50,000.00
	Furnish Imported Trench Backfill Type A1	TON	1,800	\$20.00	\$ 36,000.00
	Furnish Foundation Type A5	TON	600	\$20.00	\$ 12,000.00
	Miscellaneous Subtotal				\$ 118,000.00
	CONSTRUCTION SUBTOTAL				\$ 520,000.00
	Design				\$ 42,000.00
	NEPA Compliance				\$ 21,000.00
	Construction Management				\$ 42,000.00
	TOTAL INDIRECT COSTS				\$ 105,000.00
	TOTAL				\$ 625,000.00

